

## Hamilton County, OH Energy Performance Contracting Aggregation Project

### Overview:

Hamilton County is located in the southwest corner of Ohio. It is the 3<sup>rd</sup> most populous county in Ohio with a population over 800,000. Cincinnati is the county seat. In 2009 Hamilton County received \$3.4 million dollars in formula EECGB funds to complete performance contracts on municipal buildings in Hamilton County. Many of the county municipalities did not receive EECGB funds due to their small populations. Therefore the county decided to use a portion of their funds to provide incentives for Hamilton County municipalities to explore and implement energy performance contracts (EPC) on their own buildings.

An EPC provides for the turnkey installation of efficient energy (and water) equipment, along with a guarantee that the savings will pay for the financed cost of the improvements. Services typically include energy auditing, equipment specification and engineering, installation and commissioning of improvements, appropriate operations and maintenance procedures, and monitoring and verification of energy savings. Some of the benefits of EPC are:

- Guarantees that future operating cost savings will pay for the improvements.
- Also contain guarantees of environmental comfort parameters, such as ventilation rates, temperature and light levels to increase tenant comfort and productivity
- comprehensive approach to energy and water savings that is more cost effective than a single measure approach
- Access to the technical expertise of an energy services company (ESCO) to design and build a comprehensive technical solution for energy and capital improvements
- Measurement and Verification (M&V) are included in the contract to validate energy savings
- Integrates utility incentives into project
- Uses a single request for proposals (RFP) to cover all aspect of the project and one services contract with the selected ESCO
- Ability to select equipment and services based upon the quality and value rather than lowest first cost
- Reduced administrative costs through managing a single provider that is accountable for all aspects of the project.

However in order to have a viable EPC, the estimated project cost must be at least \$500,000 - \$1 million. It is challenging for small municipalities to find that much opportunity within their existing building stock. Therefore aggregating several municipalities can form a viable project and provide some economies of scale for the participating municipalities to improve their building stock and save energy and operating costs. So doing also attracts ESCOs otherwise not interested in pursuing very small projects.

## Hamilton County Aggregated EPC Project Specifics

After being awarded the EECGB funds in late 2009, Hamilton County assembled a team to successfully implement an EPC in county buildings as well as various municipal buildings within the county. The team was comprised of a Hamilton County representative, a Greater Cincinnati Energy Alliance (GCEA) representative and a Clean Energy Solutions Inc. (CESI) representative, (the “owner’s agent” hired to provide expert guidance throughout the project process). Initially, the county reached out by email, phone and one-on-one meetings to all of the municipalities within the county that did not receive EECGB funds, to generate interest in an aggregated EPC along with other Hamilton County buildings. Initial interest was high, with 14 municipalities interested in exploring the opportunity. These municipalities provided basic information such as:

- Potential number of buildings
- Total square footage
- Total annual energy usage and cost
- Contact information



Photo courtesy AMERESCO

The information helped Hamilton County along with GCEA and the owner’s agent to better assess the project potential and the viability of creating a successful EPC.

Through the owner’s agent services, in conjunction with the Greater Cincinnati Energy Alliance (GCEA) and the County, each municipality had the opportunity to learn about the EPC process, its benefits and limitations. Concurrent with the outreach and education, the County with the help of CESI, released an RFP, to select the energy services company (ESCO) to implement the EPC. The RFP received 9 responses from eligible ESCOs. The responses were reviewed by a committee created by the County as well as the owner’s agent to provide guidance on the selection. Ultimately, AMERESCO was selected using judging criteria that focused on the following areas:

- Responsibility, capability and qualifications – focused on the quality and quantity of recent projects (20 points)
- Qualified personnel – emphasizing experience on similar projects and management capabilities (10 points)
- Technical approach – methods used to define the particular project (30 points)
- Cost, savings and financing – the proposed financial approach (20 points)
- Service agreement, Energy guarantee – ability to provide energy guarantee for at least 10 years(20 points)

AMERESCO was selected because of their reputation, track record with municipal EPC projects and overall approach. One element that made AMERESCO especially attractive was their agreement to complete the investment grade audits (IGAs) for \$0.07 a square foot both for the Hamilton County buildings as well as any municipality that decided to move forward. Hamilton County has over 3 million square feet of county

buildings, with a potential 1,000,000 square feet conditioned and possibilities for the EPC project. Therefore, the total amount of square footage that was potentially eligible for the EPC made this low cost viable, greatly reducing the upfront cost of the IGA for all participants.

Four municipalities ultimately moved forward with an EPC. However one, St. Bernard, completed an EPC on their own, using a different ESCO (Perfection Group), due to time constraints.

The demographics of the 4 communities that participated in the EPC are as follows:

- Blue Ash is an inner suburb of Cincinnati with an approximate population of 12,000. Blue Ash has a strong commercial sector and a median household income over \$81,000 (nationally it is approximately \$50,000). Because of the strong commercial sector, financially Blue Ash is strong.
- The Village of Lockland has an approximate population of 3,500 and has a slowly declining population. The median household income is approximately \$34,000. There is very little commercial base in Lockland. The Town Administrator was once the administrator for Hamilton County and had experience with energy projects. Having a champion for the project was key for Lockland to overcome some of the hurdles, such as financing and unfamiliarity with EPCs.
- Cheviot has an approximate population of 8,000 with a median household income of approximately \$50,000. The commercial base is comprised mostly of small local businesses.
- St. Bernard has a population of 4,400 with a median household income of approximately \$45,000. There are a few local commercial businesses in town. St. Bernard received a “rebate” against the cost of qualified ECMs previously installed under their EPC. (Because the St. Bernard project was separate from the aggregated EPC projects, the project details are not listed in the table below.)



Photo courtesy AMERESCO

It is evident that small municipalities, with populations under 5,000 can successfully complete EPCs when projects are aggregated with larger municipalities to increase the overall project size. The chart below provides the project specifics for the various Hamilton County municipalities.

municipality	number of buildings	Square footage of buildings	energy cost baseline	utility incentives	other incentives	project cost	estimated savings (15 year life of contract)
Blue Ashe	10	310,529	\$ 559,459	\$ 15,000	\$ 279,000	\$ 1,966,155	\$ 2,231,719
Cheviot	4	53,314	\$ 90,661	\$ 6,800	\$ 244,000	\$ 629,025	\$ 632,235
Village of Lockland	5	29889	\$ 63,104	\$ 2,131	\$ 85,000	\$ 274,304	\$ 160,048*
TOTAL	19	393,732	\$ 713,224	\$ 23,931	\$ 608,000	\$ 2,869,484	\$ 3,079,584

\* Village of Lockland used incentive funds to make up the difference between project cost and 15 year savings amount. The utility and EECGB incentive funds convinced Lockland it was time to move forward with some needed improvements.

Each of the projects that moved forward received both utility incentives and incentive funds from the Hamilton County EECGB funds. The table below illustrates that the incentive amounts ranged between 15 – 40% of the total project costs. The county based the incentive level based on the funds needed to ensure the project moved forward.

municipality	utility incentives	other incentives	project cost	% of project cost covered by incentives
Blue Ashe	\$ 15,000	\$ 279,000	\$ 1,966,155	15%
Cheviot	\$ 6,800	\$ 244,000	\$ 629,025	40%
Village of Lockland	\$ 2,131	\$ 85,000	\$ 274,304	32%

A range of energy and water saving conservation measures were installed in each municipality. The measures included:

- Lighting System Improvements
- Building Automation Controls System Improvements
- Water conservation measures: low flow toilets, shower heads and faucets
- Boiler and Chiller Replacement
- Reduction of outdoor air ventilation
- Roof insulation
- HVAC replacement and upgrade

## Owner's Agent Services

An Owner's Agent provides an energy performance contracting client with technical assistance throughout the process. The technical assistance may include but is not limited to:

- Decision maker education
- Building prequalification assistance
- Clarification or expectations and needs
- RFP/ RFQ development
- Contractor selection support
- Contract negotiation support
- Review of initial scoping audits, IGA, and EPC

"CESI was instrumental in assuring a successful completion of the County's EECBG Grant. [Hamilton County staff] did most of the internal administration of the grant for the County, but couldn't have done it with the excellent assistance of CESI. [Their] long experience in the energy efficiency field and expertise was called upon throughout the implementation and close-out of the grant."

~ Dean Niemeyer, Hamilton County Senior Planner

- Assurance of Measurement and Verification (M&V) protocols
- Installation inspection
- Assistance resolving problems

In Hamilton County, after the initial municipal interest and ESCO selection, general scoping audits were conducted to better estimate the scope of the project. The owner's agent reviewed all basic audits and answered questions for the municipalities. If interested, municipalities then received an IGA from AMERESCO. The IGAs were also reviewed by the owner's agent to ensure the best possible project. Finally the owner's agent reviewed the EPC which included final project details (equipment specifications and bids, description of measures to be installed, budgets and schedules, subcontractors to be engaged, cash flow and savings estimates, and savings measurement and verification (M&V) processes); and supported the municipalities and County in their on-site post installation inspections of each project.

## Lessons Learned through aggregated EPC project:

While energy performance contracting is not a new form of financing energy and capital improvement projects, the aggregation of multiple municipalities under one performance contract is relatively rare. Through the Hamilton County EPC aggregation many lessons were learned as well as benefits realized.

- **Overcoming unfamiliarity with energy performance contracting:** Many of the municipalities were hesitant to increase debt and thought the EPC sounded too good to be true. In order to overcome the hesitation and doubt, the owner's agent along with the ESCO worked to understand the objectives of the municipality and set expectations through education of all municipalities on the benefits and process of EPC.
- **Importance of Incentive funds:** As stated above each project received both incentive funds from utilities as well as from the Hamilton County EECGB ARRA funds. The incentives were based on project need and ranged between 15-40%. The incentive funds were imperative for attracting municipalities' initial interest in the concept and ultimately moving four of the municipalities through implementation. Without the incentive funds, the Village of Lockland would not have been able to move forward with much needed improvements.



Photo courtesy AMERESCO

- **Financing:** Even though the debt incurred through the EPC project is paid back through building operation and energy savings, finding a financial institution to finance small municipalities' energy projects is challenging. Even with the relationships with financial institutions that AMERESCO brought to the table, several of the municipalities that wanted to move forward with a project were unable to do so for lack of financing. Exploring potential relationships with banks early in the process may help ensure a successful project.



- **The need for a project champion with the assistance of an owner's agent:** St. Bernard's Service Department Director strongly advocated for EPC. The Village of Lockland had a town administrator that understood the benefits of EPC and helped educate others to garner support for the project. The other project managers were: a senior planner in Hamilton County; a Safety-Service Director in Cheviot; and the assistant to the city manager in Blue Ash. Although it should be noted that the champion is not always the project manager. The champion may be an elected official or even an involved citizen who works to initially move a project forward.
- **Framing the project in terms of sustainability:** The increase in energy and water costs in the future is inevitable. Additionally, deferred maintenance and equipment operating below optimum performance threaten the overall security and sustainability of buildings. Sustainability means greater energy security, utilizing fewer natural resources, increasing environmental health and ultimately the quality of life of citizens. Additionally municipalities may use the EPC to 'lead by example' to encourage others to implement a project and improve their buildings.
- **Owner's agent services importance because of experience and objective 3<sup>rd</sup> party project review:** Due to the unfamiliarity of EPC, municipalities can be skeptical. Generally, the ESCO provides the education and all information around the project. By adding an owner's agent to the project team, the municipality or building owner has access to expert 3<sup>rd</sup> party review of all ESCO materials and contracts as well as additional project inspection to ensure successful projects.
- **Benefit for smaller municipalities to have a pre-selected ESCO through aggregation:** The EPC process can be complicated and time consuming. Several municipalities 'piggybacking' on a single RFP for ESCO selection as well as securing owner's agent services reduces the time required by staff to release RFP and review proposals.
- **Through utilizing a single ESCO, decision-makers work with a single contractor:** EPCs are one-stop-shop as opposed to the time consuming bid-and-spec process thus saving time and resources. Additionally the contractor(s) working with the ESCO can offer reduced rates based on the size of the project. For instance, the lighting contractor selected by AMERESCO worked with all of the Hamilton County towns and therefore offered better pricing across the board.
- **Owner's Agent aids communication among all stakeholders:** While the municipalities generally need education to understand EPC, the ESCOs must also understand the municipal objectives for a successful project. Because of their deep understanding of EPC and ESCO operations, the owner's agent helps ensure effective communication of municipal objectives to the ESCO and information provided by the ESCO is understood by the municipalities.
- **Importance of the County's role as host, convener, and co-participant:** No amount of EPC financing, design, installation, or owner's agent oversight can succeed without the host's informed participation and sustained support of the process.

**For Additional Information Contact:**

**Steve Morgan, CESI President**  
**[smorgan@cleanenergysol.com](mailto:smorgan@cleanenergysol.com)**